

REMARKS

The Office Action mailed March 14, 2006 has been carefully considered.
Reconsideration in view of the following remarks is respectfully requested.

Rejection(s) Under 35 U.S.C. § 103 (a)

Claims 1-6, 9, 11-15, 21-29 and 33-37 were rejected under 35 U.S.C. § 103(a) as unpatentable over Hirasawa et al. (U.S. pat. no. 5,369,803) in view of Mathe (U.S. pat. no. 6,243,430).

Claims 7 and 16 were rejected under 35 U.S.C. § 103(a) as unpatentable over Hirasawa et al. in view of Mathe, in view of Kerth et al. (Pub. No. US 2005/0003762).

Claims 10, 17-20 and 30-31 were rejected under 35 U.S.C. § 103(a) as unpatentable over Hirasawa et al. in view of Mathe, in view of Takeda (U.S. pat. no. 5,524,044).

Claim 8 was rejected under 35 U.S.C. § 103(a) as unpatentable over Hirasawa et al. in view of Mathe as applied to claim 1 above, further in view of Kerth et al., and further in view of Russo (U.S. Pat. No. 6,301,297).

Claim 32 was rejected under 35 U.S.C. § 103(a) as unpatentable over Hirasawa et al. in view of Mathe as applied to claim 29 above, further in view of Takeda, and further in view of Kerth.

The Office Action alleges that Hirasawa discloses all the features of claim 1, with the exception of a downconverter that has “one or more active stages configured such that signal amplitudes at which said one or more active stages become non-linear are increased relative to corresponding active stages in the receiver.” This missing feature is alleged to be found in Mathe, and the Office Action contends that the combination of Mathe and Hirasawa would have

been obvious “in order to improve noise cancellation and provide high dynamic range as suggested by Mathe at col. 3, ln. 42-50, col.4, ln.1-5.” Applicants respectfully disagree.

Hirasawa is directed to an old-style car-mounted booster for a portable telephone 7. In such a device, a user has the option of using the portable telephone as a free-standing unit, or, when the user is in the car, connecting the unit to an amplifier unit (3) located for example in the trunk of the car in order to boost its transmission and reception capability. The price for such convenience is in terms of attenuation caused by the connection (curled cord 4) between the portable unit and the amplifier unit, and Hirasawa seeks to reduce attenuation caused by transmission through the coaxial cables 41, 42, and 43 that comprise the curled cord 4. Recognizing that attenuation decreases with frequency, Hirasawa downconverts the incoming signal to the intermediate frequency (IF) in the power amplifier unit 3 before transmitting it across the coaxial cables to the portable unit 7.

Hirasawa makes no mention of digital transmission, and the old-style analog telephone with which Hirasawa is concerned predates digital cellular telephones and digital communication formats. Mathe, by comparison, addresses issues that are exclusively the province of the digital domain. In particular, deficiencies associated with various types of analog-to-digital converters (ADCs) used in digital communications are discussed, and these ADCs are rejected by Mathe in favor of sigma delta type ADC ($\Sigma\Delta$ ADC) for various technical reasons that are not relevant to this discussion. Because the $\Sigma\Delta$ ADC itself has attendant shortcomings, however, Mathe proposes the use of additional, complex circuitry, including a noise cancellation circuit and a bandpass filter, to improve the applicability of the $\Sigma\Delta$ ADC to digital communication systems, and particularly, to those employing quadrature amplitude modulation/demodulation schemes or other similar types of modulation/demodulation. The discussion of non-linearity in Mathe to which the Office Action makes reference (col. 2, ll. 20-39) simply relates to problems associated with these devices, which problems Mathe seeks to rectify. There is no teaching or suggestion that the teachings of Hirasawa and Mathe can be combined; Hirasawa does not relate to digital communications and in fact does not use the central component of the Mathe patent—that is, the $\Sigma\Delta$ ADC, or any digital-to-analog converter for that matter. One of ordinary skill in the art

would therefore not look to Mathe to modify Hirasawa, even if, *arguendo*, such a combination would result in the claimed invention, which applicants do not concede. It will be recalled that according to the Manual of Patent Examining Procedure (M.P.E.P.),

To establish a *prima facie* case of obviousness, three basic criteria must be met. First there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in the applicant's disclosure.¹

In this case the Office Action has failed to show that at least the first and last of these *prima facie* criteria is met by the proposed combination of Hirasawa and Mathe, and Applicants therefore respectfully request the withdrawal of the rejections of claims 1-37, as these rejections are all based at least in part on the combination of these two references.

Conclusion

In view of the preceding discussion, Applicants respectfully urge that the claims of the present application define patentable subject matter and should be passed to allowance.

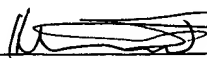
If the Examiner believes that a telephone call would help advance prosecution of the present invention, the Examiner is kindly invited to call the undersigned attorney at the number below.

¹ M.P.E.P § 2143.

Please charge any additional required fees, including those necessary to obtain extensions of time to render timely the filing of the instant Amendment and/or Reply to Office Action, or credit any overpayment not otherwise credited, to our deposit account no. 50-1698.

Respectfully submitted,
THELEN REID & PRIEST, L.L.P.

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